

# Developing AJN Network: Transforming Information to Meet the Needs of the Future

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*In September of 1993 the American Journal of Nursing Company was awarded a three-year Special Projects Grant from the Division of Nursing, Department of Health and Human Services to develop a national information service to provide a variety of formal and informal continuing education services to nurses in medically underserved communities. AJN Network went "live" in March 1994. Using a train the trainer approach, over 150 trainers were oriented in rural areas of our pilot states: North Carolina, Nevada and Wisconsin. This core group is now going out to rural hospitals to train other nurses on the system.*

*During the first year of operation, AJN Network has been available through a dial in service. Beginning in September 1994 it will be offered over the Internet, an international network linking hundreds of smaller computer networks throughout the world. This project will make use of the High Performance Computing and Communications (HPCC) initiative which provides a backbone extending across the country, capable of transmitting data at tremendous speeds.*

*Services that are currently available on AJN Network are described along with plans for future development.*

## INTRODUCTION

In September of 1993 the American Journal of Nursing (AJN) Company was awarded a three-year Special Projects Grant from the Division of Nursing, Department of Health and Human Services to develop a national information service to provide a variety of formal and informal continuing education services to nurses in medically underserved communities. The grant proposal was generated from an awareness of the pressing need for access to information in rural areas. A search of the literature and a needs assessment that included a survey of

Area Health Education Centers (AHECs) across the country documented the suspected need.

AJN Company had been considering the feasibility of providing various services in an electronic format for several years. The Company has access to a large and ever increasing amount of clinical content and other valuable information for nurses. The proliferation of bulletin boards and Internet access by and for health care providers indicated that the time was right to institute a national information service.

## NEED FOR THE PROJECT

### Literature Search

**Health in Rural America.** A search of the literature revealed that the health of rural Americans has been steadily declining. Increasing poverty, loss or lack of insurance coverage, and difficult transportation needs all combine to significantly limit rural residents' access to the healthcare that is available to them. In this environment, it is not surprising that rural residents experience consistently higher rates of chronic illness, disability, and maternal and infant mortality compared to urban residents [1]. In addition, the increase of the geriatric population with related health problems and the increase in new illnesses, such as the 37% increase in AIDS cases in rural areas from 1988 to 1989 [2], have placed a serious burden on the already stretched rural health care system. All of this has only added to the demands made of the rural nurses.

**Rural Nursing.** The rural environment places special demands on the rural nurse. Isolated geographically, rural nurses are affected by the factors of excessive autonomy, lack of adequate staffing, lack of organizational resources, and limited technology [3]. Clinically, rural nurses need to be proficient in all areas. The rural nurse is often the lone practitioner and the generalist, having to meet any need presented by a patient. Yet, "recent

employment data show that nurses in rural settings have less professional education than those employed in agencies within a metropolitan area" [4].

The nurse in a rural community has both opportunities and limitations for development and fulfillment. The nurse can be a community leader and decision maker in health policy and community projects. Nevertheless, low salaries, longer hours of service and being on-call, less time off, and less access to continuing education are realities to be borne [5]. The consequences of this are becoming even more dramatic as advances in healthcare knowledge and new technologies have quickened in the last decade.

**Continuing Education Needs.** The demands of handling a variety of healthcare situations and of keeping up with the latest information and technology have increased the needs of rural nurses for continuing education. New graduates, inactive nurses returning to work, nurses expanding into new areas, and experienced nurses all need educational programs offered at frequent intervals to meet the need for keeping up to date with healthcare advances. Currently, 22 State Boards of Nursing require that nurses and/or nurse practitioners acquire a defined number of continuing education hours in order to renew their licenses to practice. With or without a legal mandate, the rapid changes in healthcare now mean that nurses must stay current in order to practice safely.

Access to the necessary continuing education for rural nurses remains difficult, however. The factors of distance, travel and course cost, and the lack of personnel to provide coverage all contribute to reducing the ability of rural nurses to pursue continuing education [6]. In addition, in-house educational programs that can cost as much as \$5,000 per nurse have been the first to be cut as rural hospitals struggle to remain financially viable. Furthermore, there is not enough time for rural nurses to devote to education purposes when hospitals cannot cover the costs of replacement staff and cannot even spare senior staff for on-the-job mentoring.

#### **Needs Assessment**

A questionnaire was developed and administered to key personnel in Area Health Education Centers (AHECs) across the country. Both the telephone and electronic networks (Health Alaska, Virtual Medical Center in Montana, ALF - the Rural Information Center electronic bulletin board, ET Net, and the

Internet) were used to collect data. We assembled information from 25 sites in 22 states representing all geographic regions of the United States. The survey revealed that the major concern of rural nurses was access to continuing education and information. We learned that nurses isolated in extremely rural areas have problems traveling to conferences when swampy roads are covered with water and mountain passes are filled with snow. We heard about small rural hospitals without any library facilities or access to recent books and journals. While access to computers and modems is limited in some rural areas at this time, when asked if nurses would use computers for CE, the answer was "yes." The recent efforts of several AHECs and other state nursing organizations in exploring new electronic network technology speaks to the need for further improving access to continuing education for nurses via technology.

#### **ELECTRONIC NETWORK SOLUTIONS**

Individuals and organizations have started to implement electronic networks and bulletin board systems to attempt to meet the information needs of nurses. We investigated the offerings of the several of these including ET Net, the American Nurses Association's WAIS (Workplace Advocacy Information System), Sigma Theta Tau's Electronic Library, the "Healthcare building" of Denver Free-Net, Nurses Corner (Florida), Nurses Station (Kentucky), FITNET (Fuld Institute for Technology in Nursing Education), PC Nurse (Delaware), Trilogy (Maryland), SON\*NET (Texas), KARENET (Texas), and CAMEL (Nevada). We found these electronic networks valuable, but generally limited in scope and their ability to address continuing education needs of rural nurses.

The use of electronic media to disseminate information has been strongly recommended by several experts in rural nursing [7]. The proliferation of state and local electronic networks for nurses with different purposes indicates that there are growing numbers of nurses who are able and willing to use the new communications technologies. In addition, PC costs are plunging, making new hardware technology more readily available. Therefore, programs must be developed to meet the capabilities of the new technologies and the needs of those who will use them. The *AJN Network* is being designed to meet that need.

## PROJECT OBJECTIVES

Based on the information gathered, the objectives of the project were developed as follows:

1. to develop a computer network system, reachable through personal computer modems, which will serve the needs of nurses on a national level;
2. to provide access for nurses to information that will assist them in providing effective nursing care, including direct patient care, management, and promotion of community health by
  - a. establishing a nurse consultant help-line with expert nurses who will respond to specific inquiries from nurses;
  - b. establishing a Bulletin Board system for nurses to ask their peers for answers to specific nursing care and management questions and to share information;
  - c. making available AJN Co.'s library of patient information so that nurses can print this information directly for patients;
  - d. establishing a special consultation service on HIV/AIDS which will provide prevention information and increase the knowledge and skill of nurses caring for persons who are HIV positive or who have AIDS;
  - e. establishing a special consultation on sociocultural diversity for nurses to gain cultural competence which will assist them in providing care to members of diverse cultural groups;
3. to provide greater access for nurses to continuing education by
  - a. offering computer assisted instruction (CAI) programs on topics relevant to (and selected by) the users;
  - b. establishing a feature article of the month and a time during which nurses from anywhere can talk to the author through synchronous conferencing--the author can also respond to questions posted through the Bulletin Board;

- c. offering on the network continuing education articles and tests which are available on a monthly basis in the *American Journal of Nursing*, *MCN*, *The American Journal of Maternal Child Nursing*, and other publications;

- d. creating new continuing education course offerings from user input on the bulletin board;

4. to provide assistance to nurses in accessing the large, existing resources of healthcare information already available by

- a. converting information from a variety of sources that currently exist in print format to searchable digital databases;

- b. providing access to or information from existing digital databases available on the Internet and elsewhere;

- c. establishing a special feature section that provides national and international news affecting nurses and healthcare in medically underserved areas.

## PROGRESS TO DATE

To initiate the development of our information service, we recruited the remaining personnel for the project, began the identification of content, and the selection of equipment and software.

### Software/Hardware Selection

Following an extensive review of commercially available software and hardware for bulletin board systems project staff selected Res Nova software and a Macintosh platform. We also selected a program called Ripterm that provides communications software with a graphical user interface.

### Network Content

In order develop content that would be responsive to the needs of rural nurses in our pilot states of North Carolina, Nevada and Wisconsin, we developed a learning needs assessment that was mailed to the pilot sites, returned, and summarized. We used the results

of this assessment, along with suggestions from our Advisory Panel members to plan the offerings on the *AJN Network*. Much of the work in this first year of the grant has been devoted to setting up the process, policies and procedures for putting content on *AJN Network* and to make that process as automated as possible.

**Forums.** One of the most active areas to date has been the Forums. Forums are intended to be used for professional support and peer education purposes. At this time, we have Forums for typical clinical areas, such as Medical/Surgical, Maternal-Child, Emergency, Gerontology, and Psychiatric/Mental Health Nursing. In addition, Forums have been added for Rural Health, Administration/Management, HIV/AIDS, Medications and Cultural Issues. Nurses with experience in these areas have volunteered to act as moderators of these Forums and encourage discussion among Forum users. Forum messages will be monitored and evaluated carefully. Additional Forums will evolve based on user input.

**Nursing Consult.** The goal of the Nursing Consult area of *AJN Network* is to provide consultation on clinical care problems. In preparation, a database of nurse experts has been designed and implemented on AJN Company's local area network. The editors of AJN Company journals are in contact with authors on virtually every nursing subspecialty. The Convention Manager has an extensive list of speakers who have expertise in a wide range of nursing areas. These nurses entered their list of nurse experts into the database. It now contains over 2000 names. When a nurse in a pilot site posts a question in our "Nursing Consult" section, the database will be used to locate an appropriate person to respond to the query. Legal advice is under consideration regarding policies and procedures that would govern information that is posted in the "Nursing Consult" section.

**Continuing Education.** Continuing education (CE) offerings currently on *AJN Network* consist of computer-assisted instruction programs and CE print products that have been converted for downloading.

**Computer-Assisted Instruction.** Four CAI programs are now available for downloading only in the pilot states. We are entering into agreements

with other companies to have portions of a program (one case study for example) available for distribution on a wider basis. We see this as a way for software developers to beta test programs and to make demonstration copies available. Eventually it can be a way to distribute programs.

**CE Articles.** The Project Coordinator meets regularly with the AJN Director of Continuing Education to identify CE offerings in print that are relevant to the project users. These are converted to a digital format that is usable on the network and set up so that they can be downloaded and printed at the user's site. Conversion procedures and instructions for users on downloading and printing have been developed. Plans are in motion to have CE tests returned electronically for automated processing and quicker response time.

**Journal Club.** We believe it is not sufficient to just convert print materials to an electronic format. Each medium has its own characteristics and strengths that should be matched to the content. In an effort to convert our beliefs into practice we are initiating a Journal Club.

An AJN article will be available for users to download and read, then the author will respond to questions posted on *AJN Network* about that article for the following 30 days. One or two hours during that month will be set aside for a synchronous conference -- the author will log onto *AJN Network* and answer questions as network users post them during that hour. *AJN Network* can currently support 103 simultaneous users.

AJN Company's journal editors have been working with Project Staff to identify authors who might participate in "Journal Club." Our intent is to offer a "Journal Club" for each of AJN Company's journals *American Journal of Nursing*, *MCN*, *The American Journal of Maternal Child Nursing*, and *Nursing Research*. We are pursuing relationships with other journals who may also want to establish a "Journal Club" with their own authors and articles.

We are also working with our CE Director to offer CE credit for participation in "Journal Club." Our software will allow us to track the amount of time each individual user spends in

the synchronous conference with the author as well as time they spend posting and reading messages about the Journal Club article. If the amount of time equals 50 minutes or more, we may be able to offer CE credit. This matter will be pursued in more detail in Years 2 and 3, after we have more experience with the software and examine more carefully how users are responding to Journal Club.

Another plan to provide innovative, timely and responsive continuing education offerings involves using our Forum Moderators and Project Coordinator to monitor bulletin board messages and analyze the type and frequency of questions. From this information, the Project Coordinator will determine what topics are significant enough to warrant a course offering. The Project Coordinator will then work with the Program Director, the Director of Continuing Education, and editorial staff to create a new CE course offering. An example might be the pulling of questions and answers on HIV/AIDS from various parts of the network and the creation of an article on "Rural Nurses' Major Questions and Concerns About HIV/AIDS." This objective will be developed fully in Years 2 and 3, after our user base expands.

**Databases.** Two databases are now functional: a list of nursing organizations and a listing of nursing conferences with over 400 listed. A full search Apple search engine is used to search for entries. More databases are planned.

**News.** Segments from Nurse Executive Newscan, a monthly audiotape distributed by AJN Co. are currently available in the Administration/Management Forum. Plans are in progress to have AJN Company's news editor to identify news that will be of most interest to the user population, post it on AJN Network, and encourage forum discussions on topics. Once a regular system for handling this is established, the service will be ongoing in the second and third years of the project.

**Patient Information.** Patient information sheets on a variety of topics have been converted to digital data and set up so that the sheets can be downloaded and printed at the user's site. Plans for acquiring and posting other patient focused materials are under discussion.

## FUTURE PLANS

We will devote considerable time to examining resources on the Internet in Year 2, evaluating information available through the Internet and informing our users about other valuable sources of electronic information. We will investigate incorporating digitized audio, still images, and motion images as well as text.

Our goal is also to make AJN Network as user friendly as possible. We have already instituted a help line that users can call for personal assistance in logging on or using the Network. A database is used to log problems that users encounter so that we can include these in our manual. We have begun preliminary discussion of a graphic motif or metaphor that will provide an easy graphical interface for users.

Guided by an eminently qualified Advisory Committee, and in response to continued surveys that are conducted on the network, AJN Network will continue to add new resources and endeavor to meet the information needs of nurses throughout the world. At the conclusion of the grant period AJN Network will be offered as a subscription service to generate revenue for continued development.

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